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## ON THE GENUS TINOCERAS AND ITS ALLIES.

BY PROFESSOR O. C. MARSH.

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IN the March NATURALIST (p. 157) there is an article by Prof. Cope, on "The Gigantic Mammals of the Genus *Eobasileus*," which contains no new facts on the subject, but some interesting additions to the list of errors which I have pointed out in the same number (p. 151). This paper purports to have been read at the Dubuque Meeting of the American Association of Science, but obviously includes the results of Prof. Cope's later investigations, as well as some corrections suggested by my recent criticism. This is equally true of the appended paper, which was first issued separately, and has just been republished, in an amended form, in the "Proceedings of the Philadelphia Academy" (p. 11).

Since the March NATURALIST was published, I have had an opportunity, through the kindness of Prof. Agassiz, of examining a series of photographs of the skull described as *Eobasileus cornutus*, by Prof. Cope. These views fully confirm my previous belief in regard to this specimen (p. 153), viz.: that it belongs to my genus *Tinoceras*, and hence to the Dinocerata. The species is apparently *T. grandis* Marsh. These photographs, moreover, when examined in connection with remains of Dinocerata in the Yale Museum, show conclusively that Prof. Cope has, from the first, mistaken many important characters of his own specimens, and hence his erroneous conclusions in regard to the group to which they belong. His papers on this subject, therefore, should be corrected on the following points, as well as on those I have already mentioned:—1st, The name *Eobasileus* Cope, is a synonym of *Tinoceras* Marsh, which antedates it (p. 152), and the name of the family, Tinoce-  
ratidæ, likewise has priority over Eobasiliidæ, which Prof. Cope has recently introduced. 2nd, The name *Loxolophodon* Cope should not be applied to this genus, as there is no satisfactory evidence that the single premolar tooth to which it was first given is generically identical, and the probabilities are against it. 3d, The species *Eobasileus cornutus* Cope appears to be the same as *Tinoceras grandis* Marsh, which was first described. The species *E. furcatus* Cope, founded on portions of supposed nasal bones (which Prof.

Cope has since called frontal bones), has at present no authority, the specimens described being evidently the posterior horn-cores of other known species. Judging from the description, the name *E. pressicornis* Cope, has no better foundation. 4th, The genus *Dinoceras* Marsh, is distinct from *Uintatherium* Leidy, although perhaps nearly related. 5th, The mammals of the above genera cannot be placed in the order *Proboscidea*, but constitute a separate order, *Dinocerata*. 6th, The presence of a proboscis does not directly result from the osteological characters of this group, but is inconsistent with them; and hence the evidence is strongly against it. 7th, The skull in the *Dinocerata* presents no distinctive Proboscidian features, and the subordinate resemblance in the limb-bones, I pointed out before Prof. Cope wrote anything on the subject. 8th, The presence of canine teeth and horns, alone, was not stated by me to be characteristic of a new order, but other important characters were mentioned (p. 150). 9th, The canines of the *Dinocerata* do not correspond to the tusks of the elephant, and the latter are not enclosed between the premaxillary and the maxillary, but are inserted in the former bone. 10th, The nasal bones of the *Dinocerata* are much elongated, and do not have their free extremities extremely short, or deeply excavated. 11th, The frontals do not extend in front of the premaxillaries; their extremities do not form bony projections like shovels, and they do not support horns or processes at both extremities. 12th, The anterior horn-cores are on the nasal bones, and not on the frontals, and they are not composed externally of the maxillaries. 13th, The middle pair of horn-cores are not on the frontals, but on the maxillaries, their inner inferior margin alone being formed of the nasals. 14th, The tarsus and foot are not strictly Proboscidian in character, but show strong Perissodactyl features, *e.g.*, in the absence of a hallux, and in the articulation of the astragalus with both the navicular and cuboid bones.

The species of *Dinocerata* at present known with certainty are the following:—*Tinoceras anceps* Marsh, *Tinoceras grandis* Marsh, *Uintatherium robustum* Leidy, *Dinoceras mirabilis* Marsh, and *Dinoceras lacustris* Marsh. To these should probably be added *Megacerops Coloradensis* Leidy.